BOMBS

WHAT TO DO AND WHEN TO DO IT

INFORMATION FOR THE HOUSEHOLDER

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Preparation and Maintenance of Buildings

PREPARE NOW! Remember incendiary bombs are intended to ignite combustible materials—you can't change the general construction of your buildings, but you CAN remove all waste materials, paper and rubbish. You CAN clean the attic, which is one of the principal danger points.

1. Remove all rubbish, waste and unnecessary materials from the entire premises, particularly from all attic spaces.

2. Arrange remaining materials so that all areas are readily accessible and provide openings to any blind attic spaces.

3. Clean and keep clean all stairways, exits, aisles, passageways, and if proper exits for upper floors are not available, see that they are provided. Provide safe ladders for immediate use at any trap doors to attics or other such locations.

4. See that attic floor is tight and well laid and that the channel between wall studding does not communicate with the attic space. Considerable protection against incendiary bombs is afforded by a tight attic floor covered with two to three inches of dry sand with a layer of wire mesh above the sand to prevent its displacement by incendiary bombs which may penetrate the roof.

5. If premises are to be left without attendants for **several days or for an extended period,** see that all gas outlets, including pilot lights and the **house gas service valve** are turned off and that main electric switches are disconnected. **Otherwise it is not necessary, on account of present emergency conditions, to turn off the main gas supply line to the building or pilot lights,** unless an unusual situation exists where such pilot emits sufficient light to impair a complete blackout. If bombing begins in your **immediate** neighborhood, however, turn off main gas supply.

6. Prepare now at least one room for normal living under blackout conditions. In preparing the room, such materials and methods should be used so that when they are applied, blackouts will be certain and it will not be necessary to make emergency repairs and check the effectiveness of such measures at the time of each succeeding blackout.

7. Call on your local fire department for advice on special cases.

Incendiary Bombs

THERMITE BOMBS: These bombs vary from two to fifty pounds in size but are usually small. As long as the thermite itself is burning the bomb looks very vicious but this action soon stops and the result is the formation of a molten mass of iron which is mainly relied upon to insure ignition of combustible materials. Sand may be used to cover the bomb as soon as it can be approached and it is sometimes possible to prevent ignition by the thermite but it should be remembered that the molten metal is being formed under the sand even though air is cut off and that wooden floors will be quickly penetrated. The material of this bomb does not need a supply of air in order to complete its action. After the action of the thermite has stopped, it may be possible to scrape the hot metal on to a shovel and put it in a bucket containing three to five inches of sand. A water spray may be used around the metal to extinguish other materials but solid jets of water should not strike the molten metal as it may cause scattering.

MAGNESIUM OR ELECTRON BOMBS: This is the type of bomb which has been used by the Germans on London. This is a small bomb carrying an igniting charge in a case made of a magnesium alloy. The igniting charge sets off the magnesium case which forms the main incindiary mixture. The bombs may weigh from 2.2 to about 4 pounds and while the igniting mixture is burning the reaction is very vicious and the bomb is difficult to approach as burning particles may be thrown from 30 to 50 ft. This action is usually complete in from 45 seconds to 2 minutes and then the magnesium case burns more or less quietly from 10 to 15 minutes. As soon as the igniting charge is burned out the bomb may be successfully attacked and handled. These bombs, being light, do not have a great power of penetration and often stop on the attic floor. They burn with terrific intensity and are capable of penetrating a wooden floor in from two to four minutes and you must be prepared to handle a bomb on a lower floor. Whenever it is possible, attack the bomb immediately after the first vicious action of the igniting charge is over and rake it on to a bed of **dry** sand, to preven floor penetration. The bomb should be covered with dry sand and then the entire pile may be placed in a bucket partially filled with sand by use of a long handled shovel and hoe after which it may be removed from the building. It should always be remembered that this bomb is still burning even though well covered with sand and apparently extinguished. Ordinarily fire extinguishing agents make the bomb burn more rapidly. Do not attempt to extinguish the bomb with carbon tetrachloride, carbon dioxide or foam type extinguishers. Do not strike the bomb with a solid jet of water or attempt to use pails or pans full of water. Where a proper stream of water in the form of **a well broken spray** is available it can be very effectively used on the bomb from behind a chair, table

or other shield. Water spray causes the bomb to burn out very quickly reducing the time of burning from 10 to 15 minutes to less than 3 minutes. A spray of water may be used on the surrounding materials. It is only after the bomb is eliminated that the fire started can be completely extinguished. In houses of light construction which do not have attic floors, the bomb may penetrate immediately to the living quarters.

PHOSPHOROUS BOMBS: These bombs are generally of the scatter type having a small explosive charge to rupture the container and scatter the phosphorous. They are generally of larger size and a 30 pound bomb may scatter burning particles over a considerable area. The phosphorous ignites upon contact with the air and requires air in order to burn. Water may be used to extinguish the phosphorous but as soon as it dries off it will reignite. The phosphorous particles must be collected and taken to some location where they may be buried or allowed to burn out. All of the area in the vicinity of such a bomb must be examined to locate these particles. Burning phosphorous gives off a characteristic white smoke which is readily detected. Sand or water form good extinguishing agents. A solution of copper sulphate forms a coating of copper on the particles and prevents them from reigniting in the air. Burns from phosphorous are severe and continue until the particles are removed from skin or flesh. A 2% solution of copper sulphate may be applied to the skin which stops the burning of the particles and they may then be removed. Do not handle any of the particles with the bare hands.

OIL BOMBS: These bombs are usually much larger and heavier than the previously noted types. They often contain finely divided chemicals so that the application of water will rekindle the fire. Oil is often scattered **over a considerable area.** Sand, carbon dioxide and foam type extinguishers may be successfully used.

IN GENERAL: Incendiary bombs vary in type and size to a considerable extent and during the confusion and noise accompanying an air raid incendiary bombs may penetrate the roof and burn in the attic without occupants realizing the building has been struck. Many types of bombs are particularly vicious and it is practically impossible to attack them while the first charge is burning but this action soon becomes sufficiently less vicious so they may be handled or extinguished if proper methods are applied. Do not throw buckets or pails full of water on incendiary bombs and do not strike the bombs with a solid or straight stream of water. Proceed calmly and do not rush. Small intensive type bombs such as the magnesium bomb are more apt to be used than the larger ones unless the Japanese are insufficiently supplied with magnesium in which case phosphorous or thermite bombs may be expected. Phosphorous and thermite bombs are less effective than magnesium bombs. It has been reported that the Japanese have used phosphorous bombs in China. Goggles for protection of the eyes and leather gloves for protection of hands should be used when attacking the bombs.

Demolition Bombs

Demolition bombs are usually heavy (generally 100 to 500 pounds in weight) and contain high explosives. They strike with terrific force, and the mere impact may cause considerable damage. The extent of damage from the explosion depends upon whether they strike in a building or in the open. The destruction results from the huge pressure blast developed by the explosion which is often sufficient to flatten buildings of light construction. Great personal danger is present from flying and falling debris, splinters of glass and bomb fragments. Major and more or less expensive emergency changes may be made in the construction of buildings and reinforcement of houses, but such work requires specific plans for the individual building. A few emergency measures can be taken which may result in considerable reduction of lives lost and injuries received.

1. Obey your local air raid wardens **immediately.**

2. Seek substantial cover. Go to the regular designated shelters if possible. Stay on the middle floors of the larger downtown buildings.

3. Stay away from windows or doors.

4. Whether indoors or out you are less likely to be hit by bomb fragments, flying glass or debris if you are lying down.

5. Throw mattress over a strong table and get under the table.

6. If outdoors, get behind a wall or in a depression and **lie down.** Try to prevent unnecessary exposure to injury.

7. Watch for fires. Demolition bombs cause fire through destruction of electric wiring, gas mains, etc.

8. Do not touch or approach bombs which do not explode and get out of the vicinity, warning all those in the locality to leave the district. Many bombs are equipped with delayed action devices, and such unexploded bombs must be handled by experts.

Gas Attacks

According to best authorities, gas attacks are unlikely at this time, as the use of incendiary and high explosive bombs would be of more importance from a military tactical viewpoint. Destruction of military objectives would probably be of greater importance than harassing civilians. To be effective, gas must be used in large quantities, and this would be difficult. Should gas be used, it would be for the purpose of upsetting public morale and creating a panic. **KEEP COOL!** If gas attacks occur, keep to upper floors, preferably over 30 ft. from the ground, for those who have no masks may in this way avoid the heavier concentrations.

Non-persistent gases are normally dissipated in 10 minutes. The persistent type of gases may be neutralized, and contaminated objects can be decontaminated by specially trained and equipped decontamination squads. Evacuation of an area contaminated by persistent gases is a desirable and probably effective measure.

If you have been in direct contact with liquid, mustard or lewisite gas, remove clothing immediately and wash in strong solution of soap (using a strong alkali soap). Wash contaminated portions of body first and follow by a complete bath. Eyes may be washed with weak solution of boric acid. If you are seriously contaminated, seek immediate medical aid; however, in all cases where known contact has been made, a medical examination should be given. Do not indulge in violent exercise after known contact with gases.

LETHAL GASES THAT COULD BE USED:

1. Persistent Gases (concentration lasting more than 10 minutes at point of release). Mustard gas is an oily liquid having an odor of garlic, and lewisite gas is a colorless liquid with a biting odor of geraniums. These gases might be dispersed by airplane spray or bombs. Protective clothing and gas masks are necessary for complete protection. Leave the scene of contamination or go up to the top floors of buildings (at least two or three floors) and keep windows, doors and other openings closed. Stay on the upwind side if possible.

2. Non-persistent Gases (not likely to be used—these dissipate normally within 10 minutes). Chlorpicrin has a sweetish odor like flypaper, and phosgene has an odor like new mown hay or green corn. These gases might be dispersed by bombs. Gas masks are necessary for full protection. If masks are not available, stay on the upwind side if possible, or go to high floors at least 30 feet above ground.

IRRITANTS:

Smoke and lachrymators (such as "tear gas") are not casualty producing and will probably not be used. Chloracetophenone, commonly known as "tear gas," dissolves in certain solvents and has an odor of apple blossoms. Gas masks are necessary for complete protection. Keep on upper floors of building or on upwind side where possible.

SAVE THESE INSTRUCTIONS

List of Equipment

NECESSARY ITEMS:

- Long handled, square edged shovel
- Hoe
- Several pails or sacks of dry sand (at least two 12-qt. pails). **Keep sand dry!**
- Sufficient garden hose with adjustable spray to solid stream nozzle to reach all portions of the house
- Goggles
- Leather gloves
- Pails for water (at least three 16-qt. size)
- Ladders where necessary
- Piece of ½-inch rope long enough to reach from highest point of roof to ground
- Stirrup pump or small hand spray pump with 30 feet of hose and adjustable spray to solid straight stream nozzle (if available)
- 2½-gallon soda and acid type fire extinguishers (if available)
- 2% copper sulphate solution
- Boric acid
- First aid kit.

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Summary

1. **CLEAN UP THOROUGHLY**
2. **CHECK FIRE FIGHTING EQUIPMENT**
3. **PROVIDE NECESSARY EQUIPMENT**
4. **LEARN TO USE EQUIPMENT CORRECTLY**
5. **PLAN NOW FOR WHAT MAY COME.**

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